Original Research Article

A Cross Sectional Study on Requirement of Blood Transfusion in Upper Gastrointestinal Bleeding using Blatchford Bleeding Score

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Abstract

Introduction: The Glasgow-Blatchford bleeding score (GBS) was developed in 2000 to predict the need for hospital-based intervention (transfusion, endoscopic therapy or surgery) or death following UGIB.

Objective: To compare the requirement of blood transfusion in patients presenting with upper gastrointestinal bleeding using Blatchford scoring system. To determine the association of GB score with the outcomes of UGI.

Materials and methods: A Cross-sectional observational study was conducted in Medical ICU/Wards of Pushpagiri Medical College from January 2016 to June 2017. All Patients admitted with upper gastrointestinal bleeding during this period was selected as sample size. A detailed history was taken, and a thorough clinical examination was done, complemented by relevant investigation as required for the study. Unpaired t-test and Chi square test were used as Test of significance. P-value <0.05 was considered statistically significant using Epi-info 7 software.

Results: Majority of patients were in the age group of 41 to 50 years (28.6 %). 72.6% were males and the remaining females. 54.8% of patients did not require blood transfusion at all, 20.2% was transfused 1 unit of packed red cells and only 1.2% with 4 units. 59.5% of patients who presented

with Upper GI bleed had oesophageal/fundal varices and the rest (40.5%) had a non-variceal etiology. The minimum Blatchford scoring on admission was 1 and the maximum score was 16. Significant association between initial Blatchford scoring and outcome (p value 0.001) was noted.

Conclusion: Patients should be triaged in casualty with Blatchford scoring. High score helps in predicting the requirement of blood transfusion and outcome of patients so that they can be managed judiciously.

Key words

Blood Transfusion, Upper gastrointestinal bleeding, Blatchford score.

Introduction

Upper gastrointestinal bleeding is hemorrhage originating proximal to the ligament of Treitz; in practice from the oesophagus, stomach and duodenum [1]. The severity of the disorder varies from mild symptoms, such as coffee-ground vomiting without hemodynamic compromise to exsanguination. However, most patients do not need emergency endoscopic intervention or blood transfusion [2]. The prognosis of GI bleeding is variable, from mild to life-threatening bleeding. As in all life-threatening conditions in an emergency department, physical examination, diagnostic procedures, and therapeutic efforts should be simultaneously initiated, and patients should be resuscitated and stabilized in upper GI bleeding [2]. In order to stratify patients according to the risk of the complications, such as rebleeding or death, and to predict the need of clinical intervention, several risk scores have been proposed and their use consistently recommended by international guidelines [3]. Although several scores have been published and validated for predicting different outcomes, the most frequently cited ones are the Rockall score and the Glasgow Blatchford score (GBS). While Rockall score, which incorporates clinical and endoscopic variables, has been validated to predict mortality, the GBS, which is based on clinical and laboratorial parameters, has been studied to predict the need of clinical intervention; a score of 0 identifies low-risk patients who might be suitable for outpatient management [2, 4]. The GBS enables assessment of risk based on clinical variables alone without the use of endoscopic findings. Its purpose is to aid in identification of patients requiring intervention, such as blood transfusion, or endoscopic or surgical intervention to control UGI hemorrhage [2]. The rationale behind the study GBS will be able to reliably predict whether blood transfusion will be required in cases of upper GI bleeding.

Materials and methods

Study Area - Medical ICU/Wards of Pushpagiri Medical College.

Study type - Cross-sectional observational study.

Study population - Patients admitted with upper gastrointestinal bleeding in Medical ICU/Wards.

Study duration - The duration of study was 1.5 years (January 2016 to June 2017).

Sampling Technique - Consecutive sampling technique.

Inclusion criteria

- All patients more than 18 years of age.
- Experiencing either hematemesis (NG bloody aspirate), melaena or both as confirmed by hospital staff.

Exclusion criteria

- Patients admitted with lower GI bleed
- Patients declining to undergo blood transfusion

Methodology

A detailed history was taken, and a thorough clinical examination was done, complemented by relevant investigation as required for the study. All the data were duly recorded in the standard prepared proforma. Details of each patient were recorded and analyzed with respect to etiopathology, age. Cases were put on Blatchford

scoring system and prognosticated. Cases were classified as those requiring and not requiring blood transfusion based on the score assigned on admission.

Consent Type - Written Informed consent
Ethical Consideration - Obtained from College research and ethical committee.

Statistical Analysis
Data were consolidated and entered a Microsoft Excel spreadsheet and then transferred to Epi info version 7.1.3.0. (Centre for disease control and prevention, Atlanta, Georgia, USA, 2013) software for analysis. Unpaired t-test and Chi square test were used as Test of significance. P-value <0.05 was considered statistically significant.

Results

Majority of patients were in the age group of 41 to 50 years (28.6%). Patients less than 40 years accounted to 9.5% and those more than 70 years to 16.7% (**Table – 1**). As per the percentage distribution of gender, 72.6% were males and the remaining females. This indicates that UGI bleeding was male preponderance. Both age and sex showed significant association.

Table – 1: Distribution of cases according to Age and Sex.

Age (years)	N	Percent (%)	p-value
≤40	8	9.5	
41 – 50	25	28.6	
51 – 60	23	27.4	
61 – 70	15	17.9	
>70	14	16.7	
Mean ± SD		56.5 ± 15.1	0.001*
Male	62	72.6	0.03*
Female	23	27.4	

***statistically significant**

As per **Table - 2**, 54.8 % of patients did not require blood transfusion at all, 20.2% was transfused 1 unit of packed red cells and only 1.2% with 4 units.

As per **Table – 3**, in our hospital, 59.5% of patients who presented with Upper GI bleed had oesophageal/ fundal varices and the rest (40.5%) had a non-variceal etiology out of which 29.8% had gastric erosions, 14.3% had oesophageal/ antral/ duodenal ulcer and 9.5% had Mallory Weiss tear.

Table – 2: Distribution of sample according to blood transfusion.

Blood transfusion	N	Percent (%)
0	46	54.8
1	18	20.2
2	14	16.7
3	6	7.1
4	1	1.2

Table – 3: Distribution of sample according to Endoscopy.

Endoscopy	Count	Percent
Gastric erosions	26	29.8
Varices	50	59.5
Ulcer	12	14.3
MW tear	8	9.5

Table – 4: Descriptive Statistics for GB Score.

Mean	9.8
SD	4.6
Median	10.0
Minimum	1.0
Maximum	16.0

Table – 5: Distribution of sample according to Outcome.

Outcome	N	Percent
Alive	76	89.3
Died	9	10.7

Table – 6: Comparison of GB score with the Outcome.

Outcome	Mean	SD	N	t	p
Alive	9.1	4.4	76	4.02	0.001*
Died	15.1	0.9	9		

***statistically significant**

It was evident from our study the minimum Blatchford scoring on admission was 1 and the maximum score was 16 (**Table – 4**).

Table - 5 suggest that 89.3% patients recovered from Upper GI bleed which indicates whereas only 10.7% succumbed to the disease.

According to **Table – 6**, it was analyzed that there was a significant association between initial Blatchford scoring and outcome (p value 0.001). This further concludes that blood transfusion was significantly important in cases of UGI bleeding like gastric erosions, Mallory Weiss tear etc.

Discussion

In the present study, once the criteria to select the patient were fulfilled the patients were selected for the study. It was found that out of 85 patients with upper GI bleeding, 62 were males and 23 were females. 50 patients had variceal bleeding and 35 had a non-variceal aetiology. 46 out of 85 patients required no blood transfusion at all, 11 patients needed 1 unit and only 1 needed 4 units. Only 9 out of 85 patients died due to the disease during that admission. All the patients who succumbed had a score of more than 12. In the present study it was analyzed that there was a significant association between initial Blatchford scoring and outcome (p value 0.001). This further concludes that blood transfusion is significantly important in cases of UGI bleeding like gastric erosions, Mallory Weiss tear etc. The results of this study illustrate the fact that there is a significant association between Blatchford score in Upper GI bleed with requirement of blood transfusion and outcome. Similar results have been reported in previous studies conducted in various parts of the world [5-9]. The AIMS65, GBS and Pre-endoscopic RS scores are comparable but not useful for predicting outcome in patients with variceal UGI bleed because of poor discriminative ability [5, 10, 11]. The GBS is superior in predicting the need for transfusion compared to AIMS65 score and Pre-endoscopic RS. The GBS showed its ability to discriminate severe from non-severe variceal bleeding as well as non-variceal bleeding [5, 12].

Conclusion

59.5% patients presenting with upper GI bleed has a variceal etiology. There was also a significant association between initial Blatchford scoring and outcome. Patients should be triaged in casualty with Blatchford scoring. High score helps in predicting the requirement of blood transfusion and outcome of patients so that they can be managed judiciously [13].

References

1. Management of acute upper and lower gastrointestinal bleeding. SIGN Guidelines. September 2008; 1-40.
2. Bozkurt S, Köse A, Arslan ED, Erdoğan S, Üçbilek E, Çevik İ, et al. Validity of modified early warning, Glasgow Blatchford, and pre-endoscopic Rockall scores in predicting prognosis of patients presenting to emergency department with upper gastrointestinal bleeding. Scand J Trauma Resusc Emerg Med., 2015 Dec 30; 23: 109.
3. Stig Borbjerg Laursen, et al. The Glasgow Blatchford Score Is the Most Accurate Assessment of Patients With Upper Gastrointestinal Hemorrhage. Clinical Gastroenterology And Hepatology, 2012; 10: 1130–1135.
4. Stanley AJ. Update on risk scoring systems for patients with upper gastrointestinal haemorrhage. World Journal of Gastroenterology: WJG, 2012; 18(22): 2739-2744.
5. Juan G Martı´nez-Cara, Rita Jime´nez-Rosales, Margarita U´ beda-Mun˜oz. Comparison of AIMS65, Glasgow–Blatchford score, and Rockall score in a European series ofpatients with upper gastrointestinal bleeding: performance when predicting in-hospital anddelayed mortality. United European

Gastroenterology Journal, 2016; 4(3): 371-379.

6. Pongprasobchai S, Nimitvilai S, Chasawat J, Manatsathit S. Upper gastrointestinal bleeding etiology score for predicting variceal and non-variceal bleeding. World Journal of Gastroenterology: WJG, 2009; 15(9): 1099-1104.
7. Dicu D, Pop F, Ionescu D, Dicu T. Comparison of risk scoring systems in predicting clinical outcome at upper gastrointestinal bleeding patients in an emergency unit. Am J Emerg Med., 2013 Jan; 31(1): 94-9.
8. S.A. Hearnshaw, R.F.A. Logan, K. R. Palmer. Outcomes following early red blood cell transfusion in acute upper gastrointestinal bleeding. Aliment Pharmacol Ther., 2010; 32: 215–224.
9. R. Srirajaskanthan, R. Conn, C. Bulwer. The Glasgow Blatchford scoring system enables accurate risk stratification of patients with upper gastrointestinal haemorrhage. Int J Clin Pract., June 2010; 64(7): 868–874.
10. Hsu SC, Chen CY, Weng YM, Chen SY, Lin CC, Chen JC. Comparison of 3 scoringsystems to predict mortality from unstable upper gastrointestinal bleeding incirrhotic patients. Am J Emerg Med., 2014 May; 32(5): 417-20.
11. Mustafa Z, Cameron A, Clark E, Stanley AJ. Outpatient management of low-riskpatients with upper gastrointestinal bleeding: can we safely extend the GlasgowBlatchford Score in clinical practice? Eur J Gastroenterol Hepatol., 2015May; 27(5): 512-5.
12. Abougergi MS, Charpentier JP, Bethea E, Rupawala A, Kheder J, Nompleggi D, et al. A Prospective, Multicenter Study of the AIMS65Score Compared With the Glasgow-Blatchford Score in Predicting Upper Gastrointestinal Hemorrhage Outcomes. J Clin Gastroenterol., 2016 Jul; 50(6): 464-9.
13. Barkun A, Bardou M, Marshall JK. Nonvariceal Upper GI Bleeding Consensus Conference Group. Consensus recommendations for managing patients with nonvariceal upper gastrointestinal bleeding. Ann Intern Med., 2003; 139: 843.